Canad. Med. Ass. J.
Jan. 8, 1966, vol. 94

The Use of Hypnosis in the Treatment of Exhibitionism

PETER ROPER, M.B., Ch.B., D.P.M.,* *Montreal*

ABSTRACT

The use of hypnosis in the treatment of exhibitionism is described in three patients in whom the condition had been present for more than five years. In each patient there was no subsequent recurrence of the exhibitionism once therapeutic suggestions had been made in a deep hypnotic trance, the follow-up period being respectively five years, four and a half years, and one year.

The method of treatment and the results are discussed in terms of the concepts of behaviour therapy.

It is concluded that with certain patients suffering from exhibitionism the use of hypnosis may well be one of the best methods of treatment, but considerable care should be exercised to exclude those patients with an underlying psychosis, mental defect or psychopathic condition. It is also noted that the efficacy of the treatment would appear to depend on achieving a satisfactory depth of hypnotic trance. If this is not reached, the results are less likely to be successful.

SOMMAIRE

L'hypnose a été employée dans le traitement de trois cas d'exbibitionnisme, dont le début remontait à plus de cinq années. Chez aucun des malades, on n'observa de récidive ultérieure de l'exhibitionnisme, si les suggestions thérapeutiques avaient été faites dans un était de transe hypnotique profonde. Les périodes d'observation post-thérapeutiques ont été respectivement de cinq ans, de quatre ans et demi et d'un an.

La méthode de traitement et ses résultats sont exposés en fonction des principes du traitement du comportement.

L'auteur conclut en déclarant que l'hypnose est probablement une des meilleures méthodes thérapeutiques de l'exhibitionnisme, mais qu'il faut être très prudent et éliminer les malades souffrant en outre de psychose profonde, de troubles mentaux ou de psychopathies. Il fait remarquer également que l'efficacité du traitement est fonction de la profondeur de la transe hypnotique. Si elle n'est pas assez profonde, les résultats du traitement seront probablement moins bons.

AMONGST the various types of abnormal sexual behaviour being studied at the Allan Memorial Institute of Psychiatry, Montreal, exhibitionism is one for which the controversy over etiology is matched by the variety of treatments and the uncertainty of prognosis. It is often amongst the most distressing of conditions, both to its perpetrator and the unfortunate object of the act. The disgust with which it is regarded by society in general is a reflection of the lack of understanding of its origins together with the anger engendered by its harmful effects on innocent parties, particularly when these are children or young persons.

An example of these harmful effects is seen in the first patient to be described in this paper. He was exhibited to by a man at the age of 10 years, and although this had little apparent effect at the time it was later seen as an important factor in his subsequent deviation which resulted in considerable harm and distress over a period of years. Effective treatment is therefore also likely to benefit the innocent more than is so for other forms of disturbed behaviour.

Recently a renewed attention has been paid to the treatment of certain sexual deviations in psychiatry, particularly to treatments using some form of behaviour therapy. This form of therapy is based on the theory that maladaptive behaviour or symptoms have been acquired according to the established laws of learning and that any successful treatment must rest on the same theoretical basis.

The techniques used have been variously called aversion therapy, reciprocal inhibition and anticipatory avoidance learning, and the sexual deviations reported on have included those of homosexuality,[13, 17, 31] fetishism[11, 25] and transvestism,[4, 8] as well as exhibitionism.[9]

This interest is no doubt partially due to the fact that sexual perversions present a field where the results of treatment can be more easily assessed objectively than in other psychiatric conditions, and hence a more scientific approach can be maintained.

The use of hypnosis in the therapy of sexual perversions, with apparently successful results, was reported in the last century by a number of authors, including von Krafft-Ebing[20] and von Schrenk-Notzing.[28] It is interesting to compare some of the techniques used and the optimistic results claimed by these authors with those of the modern behaviour therapists. It was von Schrenk-Notzing,[28] for instance, who stated "Thanks to therapeutic nihilism, which unfortunately still finds numerous

Presented at the International Congress for Hypnosis and Psychosomatic Medicine, Paris, April 28-30, 1965.

*Allan Memorial Institute of Psychiatry, 1025 Pine Avenue West, Montreal 2, Quebec.

adherents among physicians, *until now* [my italics] such patients have remained the life-long victims of their imperative feelings and not infrequently have finally seen themselves placed before the alternatives of the prison or the asylum; to say nothing of a consciousness ever more acutely felt with advancing years of a useless existence."

The use of hypnosis in the treatment of exhibitionism has, however, not been previously described, as far as the author is aware.

When exhibitionism was first described by Lasègue[21] in 1877, he explained the use of the new term by the lack of expressions needed to designate "those states intermediate between reason and madness", and his original criteria are still generally followed in the establishment of the diagnosis. The most notable feature is a compulsion to exhibit the sexual organs in situations where the apparent desire for, or expectation of, a normal sex act is absent and is usually precluded by the situation itself. Other characteristics noted by Lasègue were that the act usually took place at a distance; there were no "manœuvres lubriques"; no attempts were made to have sexual intercourse; there was often a return to the same place at the same time of day for subsequent acts and there was no other obvious abnormal behaviour. The act itself seemed to be instantaneous, recognized as futile without obvious causal factors, was limited to a single act on any occasion, was periodic in its recurrence and was usually without subsequent sexual activity. At the time of the act the subject appeared to be indifferent to the consequences.

The incidence of exhibitionism is stated by most authors to be high, comprising about one-third of all sexual offences. Arieff and Rotman[2] found the figure to be 35%, Ellis and Brancale[12] 30%, and Mohr *et al.*[23] 27%. Allowance should, however, be made for the fact that a much larger proportion of these acts will come to the attention of authorities than other perversions, which are often conducted in considerable secrecy and with consenting partners. The exhibitionist, on the other hand, is compelled to flagrant behaviour towards a victim from whom an overt emotional response is apparently expected and desired. Furthermore, as Lasègue pointed out, the exhibitionist has a strong tendency to return to the same place to repeat his offence, thereby increasing the likelihood of his being caught.

The exhibition or presentation of the sexual organs can be looked upon as part of normal sexual behaviour, which is seen more prominently in subhuman species. Its occurrence as part of the sexual foreplay in primates has been recorded by Lashley and Watson,[22] Zuckerman,[34] and Bingham.[6] In humans the same tendencies can be seen to underly some mating rituals seen in primitive groups, becoming more and more disguised as the culture becomes more sophisticated. In Zulus, for instance, the author has observed an interesting mating ritual that involves the man watching the woman while she bathes in a river apparently unaware of his presence. If his intentions are subsequently maintained, he is called upon by the woman to parade backward and forward in front of her before she decides whether to accept his advances.

As well as differentiating exhibitionism from normal sexual behaviour it is also important to distinguish those patients in whom exhibitionism is a symptom of another underlying disorder. Von Krafft-Ebing[20] has recorded the incidence of associated organic cerebral disease and epilepsy, and Rickles[26] has included a "depraved" category of patients in whom the exposure was used for sensual pleasure and who did not experience the compulsion or the other criteria of the true exhibitionist.

Exhibitionism is predominantly a condition affecting males, and although instances of female exhibitionism have been reported their rarity is generally agreed upon by all concerned.

Exhibitionism is thus looked upon as a neurotic condition and, as such, concepts of its etiology are many and varied. These include phallic worship;[26] narcissism and infantile regression;[29] organ inferiority;[1] regression to an infantile level of sexual development;[19] and the denial of castration with over-cathexis of a partial instinct.[14] The close relationship with scoptophilia was emphasized by Freud,[15] and the obsessive-compulsive component was remarked upon by Romm.[27]

As mentioned previously, exhibitionism can also be looked upon as maladaptive behaviour according to the principles of behaviour therapy using the classical concepts of Hull[18] and Pavlov.[24] The aberrant form of sexual gratification can then be seen to be the result of a fortuitous combination of environmental circumstances reacting upon personality factors which at that time are vulnerable. The subsequent gratification by the act causes reinforcement so that the habit pattern becomes consolidated.

Treatment in the past, apart from the report of Bond and Hutchison,[9] has been almost exclusively that of psychotherapy in its various forms, both individual and group, and results have tended to be inconclusive; in particular, adequate follow-up studies are rarely available.[5, 10, 30]

The difficulties in the treatment of exhibitionists appear to be greater than those in other sexual disorders. Mohr *et al.*,[23] for instance, found that 13% of exhibitionists continued their offences during the period of contact with the treatment clinic, compared to 4% of other sexual deviants. This is perhaps to be expected owing to the compulsive nature of the act, but this tendency to relapse can be turned to some advantage if measurement of the comparative effectiveness of treatment is desired. Not only is a relapse more obvious than in other conditions, but any tendency for the symptoms to

Canad. Med. Ass. J.
Jan. 8, 1966, vol. 94

reappear in a modified form may also be easily recognized.

Despite the continued conjecture regarding the nature of hypnosis, objective measurements of its results in various conditions have been appearing recently.[7, 16] Whether hypnosis should be looked upon as a definite state or as a condition of extraordinary suggestibility has recently been reviewed by Barber,[3] but this matter, although of considerable theoretical interest, is considered to be of minor importance insofar as this paper is concerned.

With the use of hypnosis there appear to be certain advantages over other therapeutic methods. These can be well understood by those familiar with the procedure and have been well described in the literature by various authors,[32, 33] but as in other disorders its use should only be considered after full investigations, including psychiatric case history, special tests such as electroencephalography and abreactive interviews with various drugs, have been carried out in order to exclude any underlying conditions of importance. The drug abreactive interviews can also be used to uncover material that is not brought out during normal interviews, to verify the major facts as presented, and to confirm the patient's motivation for change.

SELECTION OF CASES

The patients to be described were viewed as subjects for a pilot study of the effects of hypnosis on exhibitionism. The criteria for selection were based on those described by Lasègue[21] for the diagnosis of exhibitionism; in other words, psychotic, psychopathic, mental defective and other causes were excluded. The exhibitionism must have been present for a period of at least five years, with repeated offences leading to at least one court conviction. Three patients met these criteria.

TREATMENT PROGRAM

After the preliminary work-up had been completed as described above, the patient's suggestibility and vulnerability to hypnotic techniques were assessed, and the objective of the treatment was stated clearly to him with reassurance as to its harmlessness.

Hypnotic sessions were carried out with the patient lying on the couch in the therapist's office. The induction technique was that of suggesting increasing heaviness of the eyelids as the eyes were opened and closed, looking at a ceiling light; these were coupled with subsequent suggestions of sleepiness and heaviness throughout the body until the patient was considered to be in a hypnotic state.

This procedure was repeated until a deep trance state had been reached, at which time efforts were made to explore the patient's past by attempting to have him recall particular events surrounding his initial act, details of the act itself and his subsequent reactions. This material was not available during normal interviews, the patient apparently having some amnesia for it. This material was sought to confirm and amplify that already available, and the dynamics of his deviation were then reconstructed in terms of the following formula. The initial exhibitionistic act was looked upon as an aberrant form of sexual activity which had been assumed whilst in a vulnerable state of mind because of the various circumstances that had obtained at the time. The degree of satisfaction obtained had been sufficient for repetition of the act so that a habit pattern had become established. This simple formulation was offered as a positive suggestion to the patient while in the deep trance state and it was further suggested that as he now understood the circumstances and the reasons behind the habit, it was no longer a mystery to him, it no longer had the same control over him as previously and the need to repeat this behaviour would not recur. These suggestions were repeated to the patient until he was able to reply in the affirmative when questioned regarding his agreement and acceptance of them. Subsequently post-hypnotic suggestions were made along similar lines, together with suggestions to increase his self-confidence.

Sessions lasted for approximately half an hour and were repeated at weekly intervals or more or less frequently as thought necessary.

Follow-up studies were carried out first at monthly and then at yearly intervals to assess progress and to obtain information for possible improvements in technique.

CASE REPORTS

CASE 1.—A 22-year-old single man was seen for the first time on March 1, 1960. He had been apprehended the previous day by the police after exposing himself to a young woman in a lonely road at a nearby railway station. He had been exposing himself in this manner since the age of 15 and had at least three convictions for this crime. At the age of 17 he had been given psychotherapeutic treatment for a period of two years without any improvement in his condition, and his offences had continued subsequently despite satisfactory sex relations with women.

Initial investigations were carried out on the lines already mentioned, and the several criteria were met. With these measures completed, hypnotic therapy was commenced and the patient was found to be a very good subject. From the results obtained from the investigation of the etiological factors during these sessions, together with the material obtained previously, the major factors in the onset of his condition could be clarified.

The first event of sexual significance experienced by the patient occurred at about the age of 9 years when, with a girl of the same age, he had engaged in mutual "display". His feelings at that time were of some disappointment as if he had "expected more". At the age of 10, while walking alone, a man passing by had exposed himself and the patient felt somewhat

upset although he couldn't understand the nature of the occurrence, but he did note that the man seemed to get pleasure from the incident. At about the age of 12 or 13 he started having sexual feelings towards the opposite sex; he felt very ignorant on the subject but felt a desire to communicate with girls, wondering if they had the same feelings as he had. This, however, he was unable to do as he was at a boys' boarding school at the time and there was little or no opportunity of meeting the opposite sex.

At the age of 15 he exposed himself for the first time. On this occasion he was on a cycle run alone from school, had noticed strong feelings of sexual desire for the opposite sex, experienced an erection and then noticed a young woman coming the opposite way. He thought of the man who had previously exposed himself to him and remembering he had obtained apparent satisfaction from doing so, thought it might "work for me too; here's an opportunity, let's see what her reaction is". As he cycled past he exposed himself to her and was disappointed when he noticed little or no response from her, thinking subsequently "it didn't work that time". He lost his erection and stopped thinking of sexual matters.

The subsequent incidents were apparently of a compulsive nature, occurring despite the realization of the danger of being caught and the unlikelihood of sexual satisfaction being achieved. On some occasions when he felt a mounting desire for an hour or so before an opportunity arose he could release the tension by concentrating on purposeful activity, especially physical work. In the later incidents the desire for intercourse seemed to diminish and he was more interested in the girl's reaction.

Other information which was thought to be of significance was that at the time of onset of his condition he felt particularly lonely and unable to confide in anyone. His father, an airline pilot, was away from home for a considerable time, he rarely saw his mother who was divorced from the father, and the stepmother whom the father had recently married did not have a good relationship with the patient. There had also been a recent move away from his home surroundings to a new area and he was without friends. These details were collected over the first few hypnotic sessions and suggestions were reinforced with the new material. Initially the patient was seen three times a week, but after the first three sessions this was reduced to once a week, then once a month; in the last two years he was seen a total of four times.

Since the first hypnotic session on March 9, 1960, the patient has had no recurrence of his exhibitionism, although particularly in the early part of his follow-up program symptoms occurred which were similar in a number of respects. Initially these took the form of masturbation with his hands in the trouser pockets in front of young women whom he found attractive. The first of these took place after a year of follow-up and was repeated a month later. He came for treatment on the second occasion and was given a further hypnotic session. A similar episode took place four months later, but this was milder in nature, and there were two subsequent episodes another five and nine months later when there was a further change in that he no longer had the urge to masturbate but engaged girls in harmless conversation.

He has otherwise remained symptom-free up to the time of writing, a follow-up period of five and a half years.

CASE 2.—A 26-year-old single man was seen for the first time in November 1960. He had a history of exhibitionism since the age of 12 and had been apprehended on many occasions and convicted three times for the offence. His symptoms were very similar to those of Case 1, consisting of a feeling of mounting tension as the apparent opportunity approached, an irresistible desire to exhibit himself, and a feeling of relief and remorse afterwards. The procedures mentioned previously were carried out to investigate his condition and to confirm that the criteria for treatment were satisfied.

The important factors in the etiology of his condition were: his father had died when he was aged 10 and he had a somewhat unsatisfactory relationship with his mother, in whom he could not confide. As a young child he had engaged in sexual play with a girl cousin a year or so older than himself, involving mutual display of their sexual organs, from which he had felt considerable satisfaction at that time. At the age of 12 he had his first feelings of sexual desire for the opposite sex while walking with the cousin and he exposed himself behind her back without her knowledge.

His first real offence occurred at the age of 16 when he saw a young woman walking along a road, had a feeling of sexual desire, exposed himself in a manner similar to that which he had done as a young child and then ran away. This pattern of behaviour was repeated on subsequent occasions, followed by feelings of relief and shame. They had occurred as frequently as once a month and had persisted despite subsequent satisfactory sex relations with women.

In hypnosis he was found to be a good subject and, with the use of similar techniques to those mentioned previously, relevant material was obtained concerning the initial exhibitionistic act and subsequent behaviour. Subsequently, positive suggestions were made that his problem was a habit pattern explicable under the particular circumstances obtaining at that time. It was further suggested that he could now relinquish this habit pattern and assume more mature behaviour. These suggestions were coupled with other post-hypnotic suggestions to increase his feelings of self-confidence. Initially he was given hypnosis on a weekly basis and subsequently monthly.

Since the first hypnotic session on December 1, 1960, his exhibitionism has not recurred. Three weeks after his first session, however, he did feel a return of his desire to some extent, wandered into an office building, but just looked at the office girls. He returned for another hypnotic session subsequent to this and the previous suggestions given were reinforced.

Since January 1961, the patient has been completely free from any of his abnormal desires and no recurrence of any form of aberrant behaviour of this nature has occurred. The follow-up period has been four and a half years.

CASE 3.—A 25-year-old man was seen for the first time in March 1963. He had a history of exhibitionism from the age of 12 and had been arrested by the police for this behaviour when he was 20 and sub-

Canad. Med. Ass. J.
Jan. 8, 1966, vol. 94

sequently had psychotherapeutic treatment, but his acts had continued often as frequently as once a day. He came seeking treatment because his problem seemed to be getting worse, he was becoming more disturbed by it and he felt in imminent danger of another arrest.

The initial investigations were carried out and the patient met the described criteria. Hypnotic therapy was commenced, but the patient was found to be a very poor subject. Despite variations in the induction technique he could not be made to enter a light trance state, even after a number of attempts. During this time his exhibitionistic tendencies continued, and further incidents occurred despite efforts to prevent them by means of psychotherapy and drugs.

Three months after his first interview the patient's employment took him out of town, and he was subsequently seen only intermittently. The exhibitionism evidently continued and he was arrested for the offence again in September 1964. He was subsequently referred to another therapist, who managed after some difficulty to induce hypnosis to a deep trance level. Suggestions were given under these conditions and the patient's symptoms showed a rapid improvement. There were no further incidents of exhibitionism during the follow-up period to the time of writing (one year).

DISCUSSION

It is difficult to draw valid conclusions from only three case studies, but the fact that the exhibitionism ceased after the first hypnotic session, when suggestions were made in a deep trance state, appears to be significant, particularly so in the first and the third cases where previous attempts at therapy had been unsuccessful.

That the successful results achieved with the third patient were only obtained with another therapist may be explained by the fact that it was only after then that a deep trance state was reached; this was apparently a more important factor than any differences in the suggestion techniques that were subsequently carried out. As mentioned earlier in the paper, the subjects were looked upon as providing a pilot study of this form of therapy. Validation of the results will necessarily have to await the treatment and adequate follow-up of greater numbers.

The relief of symptoms by the hypnotic techniques mentioned can be accounted for in a number of different ways. One can employ various explanations such as are used in psychotherapy of different types. Whether one looks upon the explanations and suggestions made to the patient as having any specific significance, or as having only a general significance resulting in the extinction of conditioned responses by non-reinforcement or reciprocal inhibition, is perhaps less important than the observation of the practical results. As in many other situations, these differences of interpretation may be merely semantic.

Whatever the approach one wishes to adopt, the cessation of the exhibitionism so early in treatment once a deep trance had been reached appears to be significant and of practical importance. The recurrence of milder symptoms later in the treatment program is, however, of particular interest from both the clinical and theoretical points of view. These recurrences, which were seen in the first two cases, seemed to be attenuated and by no means constituted the full-blown picture of the previous symptomatology, although the similarities are obvious. They led to further treatment sessions which appeared to be effective, in the first case more slowly and more gradually than in the second. To some extent this finding would support the contention that it was actually the treatment which was bringing about a change in the person's behaviour and not just the passage of time or other coincidental factors. A similar return of tendencies, subsequent to the initial treatment of this condition, has been mentioned in the use of behaviour therapy by Bond and Hutchison.[9] If one wishes to utilize for explanatory purposes the concepts of conditioning, one can view the subsequent reappearance of the symptoms in an attenuated form as a partial return of a previously extinguished conditioned response.

Whatever one's opinions regarding the etiology of this condition and the reasons why hypnotic therapy is effective, it is of extreme practical importance that successful treatment is apparently possible. The use of hypnosis may well be one of the best methods of managing this condition with some patients. However, considerable caution should be exercised. Not only must one be circumspect in observing that certain criteria are adequately fulfilled, but the preceding investigations must be as thorough and as searching as possible. The efficacy of the treatment with hypnosis would appear to depend to a large degree on achieving a satisfactory depth of trance, and if this is not reached, results are not likely to be successful.

SUMMARY

A pilot study of the use of hypnosis in the treatment of exhibitionism is described. The techniques used, the criteria for patient selection, and the method of application of the techniques are described in three cases.

REFERENCES

1. ADLER, A.: The neurotic constitution; outlines of a comparative individualistic psychology and psychotherapy. Authorized English translation by B. Glueck and J. E. Lind, Moffat, Yard & Co., New York, 1917.
2. ARIEFF, A. J. AND ROTMAN, D. B.: *J. Nerv. Ment. Dis.*, **96**: 523, 1942.
3. BARBER, T. X.: *Psychol. Rep.*, **16**: 809, 1965.
4. BARKER, J. C.: *Brit. J. Psychiat.*, **3**: 268, 1965.
5. BEJKE, R.: *Acta Psychiat. Scand.*, **80**: (Suppl.) 233, 1952.
6. BINGHAM, H. C.: Comparative psychiatric monographs: Sex development in apes, vol. 5, The Johns Hopkins Press, Baltimore, 1929, p. 1.
7. BLACK, S., HUMPHREY, J. H. AND NIVEN, J. S. F.: *Brit. Med. J.*, **1**: 1649, 1963.
8. BLAKEMORE, C. B. *et al.*: *Behav. Res. Ther.*, **1**: 29, 1963.
9. BOND, I. K. AND HUTCHISON, H. C.: *Canad. Med. Ass. J.*, **83**: 23, 1960.
10. CAPRIO, F. S.: *J. Clin. Psychopath.*, **10**: 50, 1949.
11. COOPER, A. J.: *Brit. J. Psychiat.*, **109**: 649, 1963.
12. ELLIS, A. AND BRANCALE, R.: The psychology of sex offenders, Charles C Thomas, Springfield, Ill., 1956.
13. FELDMAN, M. P. AND MACCULLOCH, M. J.: *Behav. Res. Ther.*, **2**: 165, 1965.

14. FENICHEL, O.: The psychoanalytic theory of neurosis, Norton and Company Inc., New York, 1945.
15. FREUD, S.: Three contributions to the theory of sex. Authorized translation by A. A. Brill, 3rd ed., Nervous & Mental Disease Publishing Company, New York, 1918.
16. FRY, L., MASON, A. A. AND PEARSON, R. S.: *Brit. Med. J.*, 1: 1145, 1964.
17. GOLD, S. AND NEUFELD, I. L.: *Behav. Res. Ther.*, 2: 201, 1965.
18. HULL, C. L.: Principles of behaviour, Appleton-Century-Crofts Inc., New York, 1943.
19. KARPMAN, B.: The sexual offender and his offences; etiology, pathology, psychodynamics and treatment, Julian Press Inc., New York, 1954.
20. VON KRAFFT-EBING, R.: Psychopathia sexualis, F. Enke, Stuttgart, Germany, 1886.
21. LASÈGUE, E.-C.: Les exhibitionnistes, L'Union médicale, troisième série, Paris, 23: 709, 1877.
22. LASHLEY, K. S. AND WATSON, J. B.: *Journal of Animal Behavior*, 3: 114, 1913.
23. MOHR, J. W. *et al.*: Pedophilia and exhibitionism; a handbook, University of Toronto Press, Toronto, 1964.
24. PAVLOV, I. P.: Lectures on conditioned reflexes, vol. 1, International Publishers Co., Inc., New York, 1928.
25. RAYMOND, M. AND O'KEEFE, K.: *Brit. J. Psychiat.*, 111: 579, 1965.
26. RICKLES, N. K.: Exhibitionism, J. B. Lippincott Co., Philadelphia, 1950.
27. ROMM, M. E.: *Journal of Criminal Psychopathology*, 3: 585, 1942.
28. VON SCHRENK-NOTZING, A.: Therapeutic suggestion in psychopathia sexualis, F. A. Davis Co., Philadelphia, 1895.
29. STEKEL, W.: *Zeitschrift für Sexualwissenschaft und Sexualpolitik*, 7: 241, 1920.
30. THOMSON, P. G.: Some observations on exhibitionism, Toronto Psychiatric Hospital Journal Club, March 12, 1957 (unpublished).
31. THORPE, J. G. *et al.*: *Behaviour Research Therapy*, 1: 357, March 1964.
32. WEITZENHOFFER, A. M.: General techniques of hypnotism, Grune & Stratton Inc., New York, 1957, p. 460.
33. WOLBERG, L. R.: Medical hypnosis, vol. 2, the practice of hypnotherapy, Grune & Stratton Inc., New York, 1948.
34. ZUCKERMAN, S.: The social life of monkeys and apes, Harcourt, Brace and Company, New York, 1932.

SPECIAL ARTICLE

Ancient Coins and Medicine

GERALD D. HART, M.D., F.R.C.P.[C], F.R.N.S., F.A.C.P.,* *Toronto*

ANCIENT Lydian merchants produced the first coins in the 7th century B.C. These were crude discs of inconstant weight, made from a mixture of gold and silver (electrum). With the expansion of trade, the local heads of state produced coinage of uniform weight and value. Their site of origin was identified by a suitable local symbol, such as an animal or a god. A portrait of the favoured local deity on the obverse† gave the coin a reverend as well as utilitarian value; in some instances the temple served as mint and treasury. The gold and silver content of electrum varied and in 561 B.C., Lydia replaced electrum with pieces of silver or gold. This practice was soon adopted by other states. Coins were struck by hand (Fig. 1). "Off centres" occurred when the coin blank was improperly placed and double impressions resulted when a repeat strike was given. Vast numbers of coins were minted, and many of these may be purchased today for less money than collectors must pay for Canadian coins of the past 40 years. A rough estimate of coin numbers can be gathered from Livy's report of the booty taken to Rome after the plundering of Heraclea: "3000 lb. of silver bullion, 113,000 minted Attic four-drachma pieces, cistophori to the number of 249,000."[13]

At the beginning of numismatic history, Asclepius, the god of medicine, was a minor deity serving the needs of itinerant Greek physicians.[18, 20] In the 6th to the 4th century B.C., at Tricca in Thessaly and Epidaurus in the Peloponnesus, the practice of medicine was combined with a religious association in the cult of Asclepian temple medicine. The Asclepian cult adopted all that was best in current Greek scientific medicine and combined with it the counterpart of today's hospital, rehabilitation and spa services, as well as the powerful effects of suggestion and religion. Although Hippocrates and his students at Cos were Asclepiads, they did not practise the Asclepian temple medicine. As the influence of the Asclepian cult grew, the god of medicine became the principal deity in many areas. This is reflected numismatically on the coins of many centres. These serve to identify the site of temples, and Table I lists cities of the Greek world which minted coins bearing various Asclepian associations.

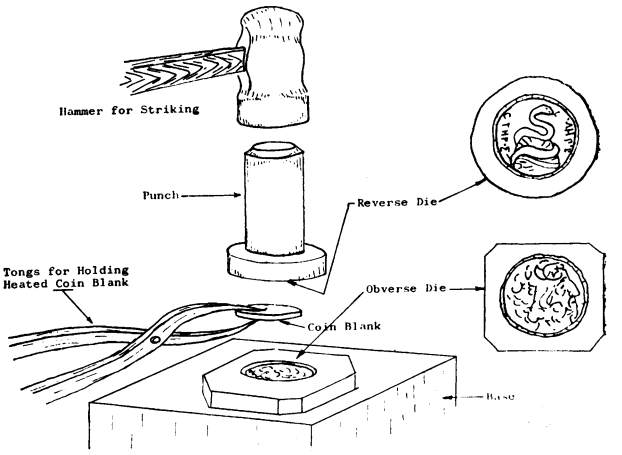

Fig. 1.—Diagrammatic sketch of the method used in striking ancient Greek and Roman coins.[3, 5]

*Chairman, Section of the History of Medicine, Academy of Medicine, Toronto, and Department of Medicine, Toronto East General Hospital, Coxwell and Sammon Avenues, Toronto 6.
†The sides of a coin are referred to as obverse and reverse, *viz.* head and tail.